

1. A computer-implemented method for using a device embedded in an apparatus to report the state of the apparatus to a remote computer, comprising:

detecting the state of the apparatus;

5 generating a message that reports the state of the apparatus using a self-describing computer language; and
sending the message to the remote computer.

2. The method of claim 1, wherein the message
10 comprises an electronic mail message.

3. The method of claim 1, wherein the message
comprises a hypertext transfer protocol command.

4. The method of claim 1, wherein the state is
15 indicative of an error condition in the apparatus.

5. The method of claim 4, wherein the error condition
comprises a variable that deviates from an acceptable value
20 or a predetermined range of acceptable values.

6. The method of claim 1, wherein detecting the state comprises receiving the state from the apparatus.

7. The method of claim 1, wherein detecting the state
5 comprises retrieving the state periodically from the apparatus.

8. The method of claim 1, wherein detecting the state comprises:

10 obtaining an identifier for the apparatus, the identifier relating to the state of the apparatus; and
reading the state from the apparatus using the identifier.

15 9. The method of claim 1, further comprising:
determining if the state of the apparatus has changed;
wherein the electronic mail message is generated if
the state of the apparatus has changed.

20 10. The method of claim 9, wherein determining comprises comparing the state received from the apparatus to a previous state of the apparatus.

11. The method of claim 1, wherein the self-describing computer language comprises eXtensible Markup Language (XML).

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12. The method of claim 1, wherein the message is generated using a predefined template, the message being generated by:

obtaining one or more variables relating to the apparatus; and

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inserting the one or more variables into the template.

13. The method of claim 1, wherein the state of the apparatus is included as part of a body of the message.

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14. The method of claim 1, wherein the state of the apparatus is included as part of an attachment to the message.

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15. A computer-implemented method for obtaining a state of an apparatus from a device embedded in the apparatus, comprising:

receiving a message that reports the state of the apparatus using a self-describing computer language; and extracting the state of the apparatus from the message.

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16. The method of claim 15, wherein the message comprises an electronic mail message.

17. The method of claim 15, wherein the message
10 comprises a hypertext transfer protocol command.

18. The method of claim 15, wherein the self-
describing computer language comprises eXtensible Markup
Language (XML).
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19. The method of claim 15, wherein the state is
indicative of an error condition in the apparatus.

20. The method of claim 19, wherein the error
20 condition comprises a variable that deviates from an
acceptable value or a predetermined range of acceptable
values.

21. The method of claim 15, further comprising passing the state of the apparatus to a customer relationship management system.

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22. A computer program stored on a computer-readable medium for reporting the state of an apparatus to a remote computer, the computer program comprising instructions that cause an embedded device in the apparatus to:

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detect the state of the apparatus;

generate a message that reports the state of the apparatus using a self-describing computer language; and send the message to the remote computer.

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23. The computer program of claim 22, wherein the message comprises an electronic mail message.

24. The computer program of claim 22, wherein the message comprises a hypertext transfer protocol command.

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25. The computer program of claim 22, wherein the state is indicative of an error condition in the apparatus.

26. The computer program of claim 25, wherein the error condition comprises a variable that deviates from an acceptable value or a predetermined range of acceptable values.

27. The computer program of claim 22, wherein detecting the state comprises receiving the state from the apparatus.

28. The computer program of claim 22, wherein detecting the state comprises retrieving the state periodically from the apparatus.

29. The computer program of claim 22, wherein detecting the state comprises:

obtaining an identifier for the apparatus, the identifier relating to the state of the apparatus; and

reading the state from the apparatus using the identifier.

30. The computer program of claim 22, further comprising instructions that cause the embedded device to: determine if the state of the apparatus has changed; wherein the message is generated if the state of the
5 apparatus has changed.

31. The computer program of claim 30, wherein determining comprises comparing the state received from the apparatus to a previous state of the apparatus.

32. The computer program of claim 22, wherein the self-describing computer language comprises eXtensible Markup Language (XML).

33. The computer program of claim 22, wherein the message is generated using a predefined template, the message being generated by:

obtaining one or more variables relating to the apparatus; and

20 inserting the one or more variables into the template.

34. The computer program of claim 22, wherein the state of the apparatus is included as part of a body of the message.

5 35. The computer program of claim 22, wherein the state of the apparatus is included as part of an attachment to the message.

36. A computer program stored on a computer-readable medium for obtaining a state of an apparatus from a device embedded in the apparatus, the computer program comprising instructions that cause a processor to:

receive a message that reports the state of the apparatus using a self-describing computer language; and
5 extract the state of the apparatus from the message.

37. The computer program of claim 36, wherein the message comprises an electronic mail message.

20 38. The computer program of claim 36, wherein the message comprises a hypertext transfer protocol command.

39. The computer program of claim 36, wherein the self-describing computer language comprises eXtensible Markup Language (XML).

5 40. The computer program of claim 36, wherein the state is indicative of an error condition in the apparatus.

41. The computer program of claim 40, wherein the error condition comprises a variable that deviates from an acceptable value or a predetermined range of acceptable values.

42. The computer program of claim 36, further comprising instructions that cause the processor to pass the state of the apparatus to a customer relationship management system.

43. A device embedded in an apparatus for reporting the state of the apparatus to a remote computer, the
20 embedded device comprising circuitry which:

detects the state of the apparatus;

generates a message that reports the state of the

apparatus using a self-describing computer language; and
sends the message to the remote computer.

44. The device of claim 43, wherein the message
5 comprises an electronic mail message.

45. The device of claim 43, wherein the message
comprises a hypertext transfer protocol command.

46. The device of claim 43, wherein the state is
10 indicative of an error condition in the apparatus.

47. The device of claim 46, wherein the error
condition comprises a variable that deviates from an
15 acceptable value or a predetermined range of acceptable
values.

48. The device of claim 43, wherein detecting the
state comprises receiving the state from the apparatus.

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49. The device of claim 43, wherein detecting the
state comprises retrieving the state periodically from the

apparatus.

50. The device of claim 43, wherein detecting the state comprises:

- 5 obtaining an identifier for the apparatus, the identifier relating to the state of the apparatus; and reading the state from the apparatus using the identifier.

- 10 51. The device of claim 43, wherein:
the circuitry determines if the state of the apparatus has changed; and
the message is generated if the state of the apparatus has changed.

15 52. The device of claim 51, wherein determining comprises comparing the state received from the apparatus to a previous state of the apparatus.

- 20 53. The device of claim 43, wherein the self-describing computer language comprises eXtensible Markup Language (XML).

54. The device of claim 43, wherein the message is generated using a predefined template, the message being generated by:

5 obtaining one or more variables relating to the apparatus; and

inserting the one or more variables into the template.

10 55. The device of claim 43, wherein the state of the apparatus is included as part of a body of the message.

15 56. The device of claim 43, wherein the state of the apparatus is included as part of an attachment to the message.

57. The device of claim 43, wherein the circuitry comprises a memory which stores executable instructions and a processor which executes the instructions.

20 58. The device of claim 43, wherein the circuitry comprises one or more of an application-specific integrated circuit and a programmable gate array.

59. A first apparatus for obtaining a state of a second apparatus from a device embedded in the second apparatus, the first apparatus comprising circuitry which:

5 receives a message that reports the state of the second apparatus using a self-describing computer language; and

extracts the state of the second apparatus from the message.

60. The first apparatus of claim 59, wherein the message comprises an electronic mail message.

61. The first apparatus of claim 59, wherein the message comprises a hypertext transfer protocol command.

62. The first apparatus of claim 59, wherein the self-describing computer language comprises eXtensible Markup Language (XML).

63. The first apparatus of claim 59, wherein the state is indicative of an error condition in the second

apparatus.

64. The first apparatus of claim 63, wherein the error condition comprises a variable that deviates from an acceptable value or a predetermined range of acceptable values.

65. The first apparatus of claim 59, wherein the circuitry passes the state of the second apparatus to a customer relationship management system.

66. The first apparatus of claim 59, wherein the circuitry comprises a memory which stores executable instructions and a processor which executes the instructions.

67. The first apparatus of claim 59, wherein the circuitry comprises one or more of an application-specific integrated circuit and a programmable gate array.

68. A system comprising:
a first device comprising circuitry which generates a

message reporting a state of an apparatus using a self-describing computer language, and

a second device, in communication with the first device, the second device comprising circuitry which
5 receives the message from the first device.

69. The system of claim 68, wherein the message comprises an electronic mail message.

10 70. The system of claim 68, wherein the message comprises a hypertext transfer protocol command.

15 71. The system of claim 68, wherein the circuitry in the second device extracts the state of the apparatus from the electronic mail message.

72. The system of claim 68, wherein the first device is embedded in the apparatus and the second device comprises a remote computer.

20 73. The method of claim 1, further comprising queuing the message prior to sending the message.

